



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/726,551  | 12/04/2003  | Du-Soung Kim         | P24629              | 5493             |
| 7055  | 7590        | 01/23/2006           | EXAMINER            |                  |
| GREENBLUM & BERNSTEIN, P.L.C.<br>1950 ROLAND CLARKE PLACE<br>RESTON, VA 20191 |             |                      | NGUYEN, CAM N       |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1754                |                  |
| DATE MAILED: 01/23/2006   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

16

|                              |                                      |                                   |  |
|------------------------------|--------------------------------------|-----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/726,551 | <b>Applicant(s)</b><br>KIM ET AL. |  |
|                              | <b>Examiner</b><br>Cam N. Nguyen     | <b>Art Unit</b><br>1754           |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/07/05 (an amendment/response).
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-18 is/are rejected.
- 7) ☒ Claim(s) 9, 11, 13, 15, & 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on originally filed is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### **Response to Amendment**

1. Applicants' amendment and remarks, filed November 07, 2005, has been made of record and entered. Claims 1 & 3-18 have been amended. Claim 2 has been canceled.

Claims 1 & 3-18 are currently pending and under consideration.

### **Specification**

2. The abstract of the disclosure is objected to because it is not written in a single paragraph format. Correction is required. See MPEP § 608.01(b).

### **Claim Objections**

3. Claims 9, 11, 13, 15, & 17 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 4, 5, 6, 7, & 8 respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### **Claim Rejections - 35 USC § 112 (Second Paragraph)**

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1754

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation "the aromatic halogenated compounds comprising dioxin, carbon monoxide and nitrogen oxides simultaneously" in the last three lines.

There is insufficient antecedent basis for this limitation in the claim.

**Claim Rejections - 35 USC § 102(b)/103**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 5-6, 8, 11-14, & 17-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Goehre et al., "hereinafter Goehre", (US Pat. 3,464,930).

Goehre discloses a catalyst containing vanadium and titanium for the oxidation of aromatic hydrocarbons or unsaturated aliphatic hydrocarbons into carboxylic acids or carboxylic acid anhydrides, said catalyst comprising an inert nonporous carrier, etc., coated with a layer of a composition which consists essentially of 1 to 15% by weight of vanadium pentoxide and 85 to 99% by weight titanium dioxide, etc. (see col. 5- col. 6, claim 1). The catalyst composition also contains at least one oxide of the metals including silver, chromium, molybdenum, and tungsten in an amount of 0.1 to 3% by weight with reference to the composition used as coating (see col. 6, claim 5). The carrier is in the form of spheres (see col. 6, claim 7).

Regarding claim 1, the claimed "vanadium", "Group 6A metals", "Ag", and "titania" amounts are met by the teachings of the reference because they fall within the disclosed ranges (see above).

With respect to the limitation on "the catalyst is treated with acid-treatment" in claim 1 and the acid-treatment step recited in claim 3, it is considered the claimed acid-treatment limitation is a process limitation. While the process limitations are not disregarded, they have no bearing on the patentability of the claimed product because it has been held that the patentability of the product and its method of production are separately determined. Even though the disclosed catalyst is not made by the same process, i.e., process steps, materials, conditions, etc., the catalyst made or disclosed is the same as the claimed catalyst. See In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); In re Brown, 173 USPQ 688, 688 (CCPA 1977); In re Fessman, 180 USPQ 324, 326 (CCPA 1977). See also *MPEP* 2113.

Regarding claims 6 & 13-14, it is considered the Ag compound(s) as required in the claims is the starting material(s) to make the catalyst and it is considered process limitation. See *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985); *In re Brown*, 173 USPQ 688, 688 (CCPA 1977); *In re Fessman*, 180 USPQ 324, 326 (CCPA 1977). See also *MPEP* 2113.

**Claim Rejections - 35 USC § 103**

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4, 7, 9-10, & 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goehre et al., "hereinafter Goehre", (US Pat. 3,464,930), as applied to claims 1, 3, 5-6, 8, 11-14, & 17-18 above, and further in view of Heidemann et al., "hereinafter Heidemann", (US Pat. 6,700,000 B1).

Goehre discloses a catalyst composition, except for the following differences.

Regarding claims 4 & 9-10, Goehre is silent with respect to the crystal structure of the titania. However, it is considered the claimed titania materials are conventional and known as useful catalyst support to make catalyst, as evidenced by Heidemann (see Heidemann at col. 11, claim 1).

Regarding claims 7 & 15-16, while Goehre does not disclose supporting the

catalyst by a structure, i.e., ceramic honeycomb, etc., it is considered ceramic honeycombs are well known and conventional support material for supporting catalysts. Thus, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated such known ceramic honeycomb into the catalyst of Goehre to achieve a stable catalyst and having improved in mechanical strength.

**Response to Applicants' Arguments**

10. Applicants' amendment and remarks filed on November 07, 2005 has been fully reconsidered, but not deemed persuasive in view of the new ground of rejections above and the following reasons.

Applicants urged that Geohre et al. does not disclose an acid-treated catalyst. It appears that the claimed acid-treatment step does not distinguish the claimed catalyst from the disclosed catalyst because there is no patentable distinction or structural difference seen between the claimed catalyst and the disclosed catalyst. Applicants did not provide a reason or explanation as to how the claimed acid treatment step would produce a catalyst differ from the catalyst of Geohre et al. It is considered that the claimed acid-treatment step is a process limitation and it has no bearing on the patentability of the claimed catalyst.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### **Citations**

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. All references are cited for related art. See PTO-892 Form attached.

#### **Conclusion**

13. Claims 1 & 3-18 are pending. Claims 1 & 3-18 are rejected. Claims 9, 11, 13, 15, & 17 are objected. No claims are allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone



Art Unit: 1754

number is 571-272-1357. The examiner can normally be reached on M, W, R, & F, 9:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen/cnn  
January 18, 2006

  
CAM N. NGUYEN  
PRIMARY EXAMINER

Art Unit: 1754